LISTING OF THE CLAIMS

1-47. (canceled)

48. (Previously presented) The method of claim 55, wherein said purified protamine fragment has a molecular weight of between about 400 and about 2000 Daltons.

49. (Previously presented) The method of claim 48, wherein said purified protamine fragment has a molecular weight of between about 500 and about 1350 Daltons.

50. (Previously presented) The method of claim 48, wherein said purified protamine fragment has a molecular weight of between about 1100 and about 1300 Daltons.

51-54. (canceled)

55. (Previously presented) A method of inactivating heparin or low molecular weight heparin, comprising contacting heparin or low molecular weight heparin with a composition comprising an amount of at least a purified protamine fragment effective to inactivate heparin or low molecular weight heparin; wherein said purified protamine fragment is bioactive, has a molecular weight of between about 400 and about 2500 Daltons as determined by gel filtration and has reduced immunoresponsiveness or toxicity compared to native protamine.

56. (Previously presented) The method of claim 55, wherein said heparin or low molecular weight heparin is located within a mammal and said composition is administered to said mammal.

57. (Withdrawn) A method of ameliorating an effect of heparin or low molecular weight heparin in a mammal, comprising administering to said mammal at least a first pharmaceutical composition comprising an amount of at least a first purified protamine effective to ameliorate an effect of heparin or low molecular weight heparin in said mammal; wherein said purified protamine is bioactive, has a molecular weight of between about 400 and about 2500 Daltons and has reduced immunoresponsiveness or toxicity compared to native protamine.

58. (Withdrawn) A method for treating or preventing undue or excessive bleeding in a mammal, comprising administering to a mammal having or at risk for developing excessive bleeding at least a first pharmaceutical composition comprising an amount of at least a first

purified protamine effective to treat or prevent undue or excessive bleeding in said mammal; wherein said purified protamine is bioactive, has a molecular weight of between about 400 and about 2500 Daltons and has reduced immunoresponsiveness or toxicity compared to native protamine.

59. (Previously presented) The method of claim 64, wherein said mammal exhibits excessive bleeding associated with systemic heparinization.

60. (Previously presented) The method of claim 64, wherein said mammal exhibits excessive bleeding associated with extracorporeal blood circulation.

61. (Previously presented) The method of claim 64, wherein said mammal exhibits excessive bleeding associated with a disease or disorder.

62. (Previously presented) The method of claim 64, wherein said mammal exhibits excessive bleeding associated with a trauma or surgery.

63. (Previously presented) The method of claim 64, wherein at least a coagulant is further administered to said mammal.

64. (Previously presented) The method of claim 56, wherein said mammal has or is at risk for developing excessive bleeding.

65. (Previously presented) The method claim 48, wherein said purified protamine fragment has a molecular weight of about 1300 Daltons.

66. (Previously presented) The method of claim 48, wherein said purified protamine fragment has a molecular weight of about 1200 Daltons.

67. (Previously presented) The method of claim 55, wherein said composition comprises at least a first and at least a second purified protamine fragment.

68. (Previously presented) The method of claim 56, wherein said mammal is a human subject.

69. (Cancelled)

70. (Previously presented) The method of claim 55 wherein inactivating heparin or low molecular weight heparin treats or prevents undue or excessive bleeding in a mammal.

70. (Previously presented) The method of claim 55 wherein the protamine fragment is a protease cleavage product.

71. (Previously presented) The method of claim 70 wherein the protamine fragment is a protease cleavage product and said protease is selected from the group consisting of thermolysin, ficin, collagenase, kallikrein and proline-specific endoprotease.

72. (Previously presented) The method of claim 55 wherein the protamine fragment is derived from a protamine selected from the group consisting of salmon protamine and clupine protamine.

73. (Previously presented) The method of claim 55 wherein the protamine fragment comprises five or six arginine amino acid residues and 1 proline amino acid residue.

74. (Previously presented) The method of claim 55 wherein the protamine fragment comprises a minimum of six arginine amino acid residues.